

**CLAIMS**

1. A method for resetting a communication connection between a first communication device and a second communication device in a cellular radio system, comprising the steps of:

- 5 - detecting the need for resetting the communication connection,
- transmitting from the first communication device to the second communication device a first piece of information indicating the need for resetting the communication connection,
- performing a resetting procedure at the second communication device,
- 10 - transmitting from the second communication device to the first communication device a second piece of information indicating the completion of the resetting procedure with respect to the second communication device and
- inserting into a certain piece of information transmitted between the first communication device and the second communication device an indication of an effective number of certain resetting operations associated with a certain detected need for resetting the communication connection.

2. A method according to claim 1, comprising the step of:

- inserting into a certain piece of information, which is transmitted from the first communication device to the second communication device and indicates the need for resetting the communication connection, a sequence number the value of which remains the same – after the need for resetting the communication connection has been detected – from the first step of transmitting from the first communication device to the second communication device a first piece of information indicating the need for resetting the communication connection to the next step of faultlessly receiving, at the first communication device, from the second communication device a second piece of information indicating the completion of the resetting procedure with respect to the second communication device.

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- 30 3. A method according to claim 2, wherein said sequence number is a single sequence number bit, the value of which remains the same – after the need for resetting the communication connection has been detected – from the first step of transmitting from the first communication device to the second communication device a first piece of information indicating the need for resetting the communication connection to the next step of faultlessly receiving, at the first communication device, from the second communication device a second piece of information indicating the completion of the resetting procedure with respect to the second communication device.

4. A method according to claim 2, wherein said sequence number is a frame structure number indicator, the value of which indicates a certain current frame structure number and remains the same – after the need for resetting the communication connection has been detected – from the first step of transmitting from the first communication device to the second communication device a first piece of information indicating the need for resetting the communication connection to the next step of faultlessly receiving, at the first communication device, from the second communication device a second piece of information indicating the completion of the resetting procedure with respect to the second communication device.

5. A method according to claim 4, wherein said frame structure number indicator is a complete value of a frame structure number.

15 6. A method according to claim 4, wherein said frame structure number indicator is a shortened derivative from a complete value of a frame structure number.

20 7. A method according to claim 6, wherein said frame structure number indicator is a group of least significant bits from a complete value of a frame structure number and consists of at least one bit.

8. A method according to claim 2, comprising the steps of:

25 - at the second communication device, checking whether a certain piece of information, which is transmitted from the first communication device to the second communication device and indicates the need for resetting the communication connection, has a sequence number the value of which is the same as the sequence number of an already received piece of information, which was transmitted from the first communication device to the second communication device and indicated the need for resetting the communication connection, and  
30 - only as a response to a negative finding in said checking, performing a complete resetting procedure at the second communication device.

9. A method according to claim 8, comprising the step of:

35 - only as a response to a negative finding in said checking, increasing the value of a certain frame structure number at the second communication device.

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10. A method according to claim 1, comprising the step of inserting into a certain piece of information, which is transmitted from the second communication device to the first communication device and indicates the completion of the resetting procedure with respect to the second communication device, an indication of the 5 result of performing completed resetting operations at the second communication device.

11. A method according to claim 10, comprising the steps of:

- initializing a certain sequence number at both the first and the second 10 communication devices,
- as a response to receiving from the first communication device at the second communication device an indication of the need for resetting the communication connection, increasing the value of a frame structure number and said sequence number by equal amount at the second communication device,
- inserting the increased value of said sequence number into a certain piece of information, which is transmitted from the second communication device to the first communication device and indicates the completion of the resetting procedure with respect to the second communication device,

- as a response to receiving from the second communication device at the first communication device an indication of the completion of the resetting procedure with respect to the second communication device, calculating the difference between the sequence number received within said indication and the sequence number previously stored at the first communication device, and
- increasing a frame structure number at the first communication device by the 25 amount of said difference.

12. A method according to claim 11, wherein said sequence number is a single bit.

13. A method according to claim 10, comprising the steps of:

- as a response to receiving from the first communication device at the second communication device an indication of the need for resetting the communication connection, increasing the value of a frame structure number at the second communication device,
- inserting an indicator of the increased value of said frame structure number into a 30 certain piece of information, which is transmitted from the second communication device to the first communication device and indicates the completion of the resetting procedure with respect to the second communication device, and

- as a response to receiving from the second communication device at the first communication device an indication of the completion of the resetting procedure with respect to the second communication device, setting a frame structure number at the first communication device into a value which is equal to that indicated by

5 said indicator which was received from the second communication device.

14. A method according to claim 13, wherein said indicator of the increased value of said frame structure number is the increased value of said frame structure number itself.

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15. A method according to claim 13, wherein said indicator of the increased value of said frame structure number is a shortened derivative of the increased value of said frame structure number.

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16. A method according to claim 15, wherein said indicator of the increased value of said frame structure number is a group of least significant bits from a complete value of said frame structure number and consists of at least one bit.

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17. A communication device for communicating between another communicating device within a cellular radio system over a communication connection, comprising:

- means for detecting a need for resetting the communication connection,  
- transmission means for transmitting to the other communication device first pieces of information indicating the need for resetting the communication connection and second pieces of information indicating the completion of the resetting procedure,

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- receiving means for receiving from the other communication device first pieces of information indicating the need for resetting the communication connection and second pieces of information indicating the completion of the resetting procedure,  
- resetting means for performing a resetting procedure for the communication connection, and

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- means for inserting into a certain piece of information transmitted between it and the other communication device an indication of an effective number of certain resetting operations associated with a certain detected need for resetting the communication connection.